Studies on pathogenicity effect of Aeromonas hydrophila infection in juvenile red hybrid tilapia Oreochromis sp.

ABSTRACT

This study was conducted to evaluate the ability of motile Aeromonas species (MAS) to induce clinical symptoms and some pathological changes in juvenile red hybrid tilapia. A standard dose of infection was selected based on predetermined LD50. Infected fish were observed for any clinical sign and symptom for 96 hours. Samples of liver, spleen and kidney were collected for histopatological changes due to Aeromonas hydrophila infection. Clinical signs of fish included abnormal swimming behaviour and loss of balance. Most of infected fish suffered from haemorrhagic eyes and lesions on the body surface. Some of the them also developed bilateral exophthalmia. Histopathological changes were observed in kidney, liver and spleen. The infected liver showed severe congestion of hepatic veins and vacuoles formation while anterior kidney manifested degeneration of excretory tubules and glomeruli followed by severe haemorrhages and hyaline droplets degeneration. Spleen on the other hand showed tissues degeneration and vacuoles formation. All targated tissues also showed deposition of haemosiderin pigments followed by proliferation of melanomacrphage centres. Development of such symptoms was associated with the infection with Aeromonas hydrophila. The current study has shown that MAS could serve as the primary cause of severe infection not only in red hybrid tilapia but may also infected other freshwater fish species.The results of histological analysis of various tissues indicates a direct correlation between disease infection and histopathological disorders observed in the tissues.

Keyword: Aeromonas hydrophila; Red hybrid tilapia; Histopathology; Melanomacrophage centres